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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/674,314

09/30/2003

Ichiro Tanji

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EXAMINER

JERABEK, KELLY L

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

12/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/674.314	TANJI ET AL.	
	Examiner	Art Unit	
	Kelly L. Jerabek	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/30/2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 08/690,557.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a first office action in response to application 10/674,314 filed on 9/30/2003 in which claims 25-36 are presented for examination.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy of Japanese patent application number P07-195634 filed on 7/31/1995, has been received in Application No. 08/690,557 and made of record.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 9/30/2003 is in compliance with the provisions of 37 CFR 1.97 and has been considered by the Examiner:

However, the Examiner notes that foreign patent document DE 4300304 has not been considered, as it is not in the English language. Additionally, foreign patent documents JP 686,096 and JP 4,341,814 have not been submitted to the Examiner for consideration and therefore have not been considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25-27, 29-31 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murayama et al. US 5,349,381 in view of Nobuoka et al. US 5,473,372.

Re claims 25, 29 and 33, Murayama discloses a video camera and a digital video signal processing method having means for generating a digital video signal, a signal modifying circuit (Figs. 1A-1B and 4A-4B), comprising: means for modifying an amplitude level of the digital video signal according to a non-linear curve (i.e., noted that a gamma correction function constitutes a non-linear curve) that represents a desired modified digital video signal as a function of the digital signal (Figs. 1A-4B, col. 4, line 15-col. 5, line 30); comprising low pass filter means (26-28) to which the digital video signal is supplied to produce a filtered digital video signal (col. 4, lines 15-68); means for generating a multiplying coefficient and an adding coefficient from a respective linear

expression of one of line segments of said filtered digital video signal; means for multiplying the amplitude level of the digital video signal by the multiplying coefficient to produce a multiplied digital video signal (figures 1A-1B and 4A-4B; elements 32-33; col. 4, lines 25-68; col. 5, lines 10-30); and means for combining the multiplied digital video signal (32,33) and the digital video signal to generate the modified digital video signals (figures 4A-4B, elements 43-45 and 50; col. 4, lines 25-68). Although Murayama discloses all of the above limitations it does not explicitly show means for dividing the non-linear curve (i.e., the Gamma Curve as used in the system of Murayama) into a plurality of sections and replacing each of the section with a respective line segment which can be expressed as a linear expression to form a succession of line segments.

However, the above mentioned claimed inventions are well known in the art as evidenced by Nobuoka. In particular, Nobuoka teaches that in order to realize a good gamma correction by preventing unnecessary distortion, it is conventionally well-known to divide the non-linear curve (i.e., the non-linear gamma curve as shown in Fig. 1A) into a plurality of sections and replacing each of the sections with a respective line segment which can be expressed as a linear expression to form a succession of line segments (Fig. 2A; col. 1, line 40-col. 2, line 6); and generating a multiplying coefficient and an adding coefficient from a respective linear expression of one of the line segments for the digital video signal (Figs. 2A, 3; col. 2, line 25-col. 3, line 15); and a means for combining the multiplied digital video signal and the adding coefficient to generate the modified digital video signal thereof (As shown in Fig. 3, the multiplied

digital video signal from the element 4 is further combined with the adding coefficient from the table 7 to generate the modified digital video signals).

In view of the above teachings, having the system of Murayama and then given the well-established teaching of Nobuoka, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Murayama as taught by Nobuoka, since Nobuoka states at col. 2, lines 25+ that such a modification would provide a gamma correction circuit with a good gamma correction with a simple circuit structure and attenuating unnecessary distortion (i.e., such as a noise or an aliasing distortion) imparted to gamma-corrected signals thereof.

Re claims 26, 30 and 34 the combination of Murayama and Nobuoka discloses a means for generating the multiplying and adding coefficients. Furthermore, it is noted that Murayama shows in figures 1A-1B that the amplitude level of the filtered digital video signal is inputted to the Gamma correction circuit 40-42 and Nobuoka teaches a means for generating multiplying and adding coefficients which includes the control circuit 9 (i.e., noted the control unit 9 used in the Gamma correction circuit as shown in Fig. 3) selects the multiplying and adding coefficients from the table 3,5 and 7 based on the input digital (col. 3, lines 20+) to generate the straight-line segments corresponding to the input digital video signals, thus, in order to precisely perform gamma correction, it is obviously essential for the control circuit 9 of Nobuoka to detect the amplitude level of the input digital video signals. In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the control circuit 9 of

Nobuoka for detecting the amplitude level of the filtered digital video signals, thereby realizing a good gamma correction with a simple circuit structure as suggested by Nobuoka (see col. 4, lines 19+).

In addition, the combination of Murayama and Nobuoka discloses means selecting one of the straight-line segments corresponding to an amplitude level of the digital video signal (see Fig. 3, col. 3, lines 25+); and means for outputting the inclination coefficient of the selected one of the straight-line segments to the modified image enhancing signal generating means (Figs. 4A-4B of Murayama and Figs. 2A and 3 of Nobuoka).

Re claims 27, 31 and 35, the combination of Murayama and Nobuoka shows wherein the non-linear curve that represents a modified digital video signal is a gamma correction function (i.e., the gamma correction circuits as used in the system of Murayama normally constitute a non-linear curve; also see col. 4, lines 55+ of Nobuoka).

Claims 28, 32 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murayama et al. US 5,349,381 in view of Nobuoka et al. US 5,473,372 and further in view of Okamoto et al. US 5,546,135.

Re claims 28, 32 and 36, the combination of the Murayama and Nobuoka references discloses all of the limitations of claims 28, 32 and 36 above. However, the

combination does not explicitly show a zero insertion means for up-converting the frequency of the digital video signal and thereby effectively increasing the sampling rate of the digital video signal.

However, the above mentioned claim limitation is well known in the art as evidenced by Okamoto. Okamoto teaches the use of a zero insertion circuit for up-converting the frequency of the digital video signal and thereby effectively increasing the sampling rate of the digital video signal (Figs. 20-21, col. 12, line 54-col. 13, line 35).

Therefore, having the combination of Murayama and Nobuoka and then given the well-established teaching of Okamoto, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Okamoto to the system of Murayama in order to perform contour restoration without producing distortions for a contour having any amplitude levels in any direction as taught by Okamoto.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Iwabe et al. US 5,068,718.

Harradine US 5,087,966.

Asaida US 5,103,299.

Tomita et al. US 5,194,943.

Yamashita et al. US 5,661,575.

Kim US 5,710,594.

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Hieda US 5,818,521.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is (571) 272-7312. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for submitting all Official communications is (571) 273-7300. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at (571) 273-7312.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KLJ



TUAN HO
PRIMARY EXAMINER